

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

 a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

 a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

 a soft magnetic pedestal adjoining the second pole layer, the soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the soft magnetic pedestal separated from the first soft magnetic pole layer by a nonferromagnetic gap, the soft magnetic pedestal having a thickness that is less than four hundred and fifty nanometers between the nonferromagnetic gap and the second soft magnetic pole layer; and

 a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers, the conductive section being part of a coil; and

wherein the magnetic head has at least one set of characteristics selected from a group consisting of the following sets of characteristics:

(a) the conductive section is ferromagnetic and the coil substantially encircles the second soft magnetic pole layer;

(b) the coil includes a first plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the first plurality of conductive sections disposed in a first layer, extending parallel to each other, and each terminating in a conductive portion that is disposed in the first layer and extends transversely to the first plurality of conductive sections; and

(c) the coil includes a second plurality of plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the conductive sections disposed in a second layer, extending parallel to each other, and having a different length measured in a direction parallel to the medium-facing surface.

2. (Currently Amended) The head of claim 1, wherein the conductive section is part of [[a]]the coil that substantially encircles the second soft magnetic pole layer.

3. (Original) The head of claim 2, wherein the conductive section is ferromagnetic.

4. (Currently Amended) The head of claim 1, wherein the ~~conductive section is part of a coil that~~ substantially encircles the backgap region.

5. (Currently Amended) The head of claim 1, wherein the ~~conductive section is part of a coil that~~ includes less than seven conductive sections disposed between and electrically isolated from the first and second soft magnetic pole layers.

6. (Previously Presented) The head of claim 1, wherein the second soft magnetic pole layer has a leading surface and a trailing surface, the trailing surface having a flat area disposed approximately midway between the medium-facing surface and the backgap region, the leading surface having a curved area disposed closest to the flat area.

7. (Previously Presented) The head of claim 1, wherein the second soft magnetic pole layer has a trailing surface that is disposed distal to the first soft magnetic pole layer, the trailing surface having a plurality of curved sections separated by a flat, polished section.

8. (Currently Amended) The head of claim 1, wherein the ~~conductive section is part of a coil that~~ includes ~~[[a]]the first~~ plurality of conductive sections ~~that are~~ disposed between and electrically isolated from the first and second soft magnetic pole layers, the first plurality of conductive sections are disposed in ~~[[a]]the first~~ layer, extending parallel to each other, and each terminating in ~~[[a]]the~~ conductive portion that is disposed in the first layer and extends transversely to the first plurality of conductive sections.

9. (Currently Amended) The head of claim 1, wherein the ~~conductive section is part of a coil that~~ includes ~~[[a]]the second~~ plurality of conductive sections ~~that are~~ disposed between and electrically isolated from the first and second soft magnetic pole layers, the second plurality of conductive sections disposed in ~~[[a]]the second~~ layer, extending parallel to each other, and having ~~[[a]]the~~ different length measured in ~~[[a]]the~~ direction parallel to the medium-facing surface.

10. (Currently Amended) The head of claim 1, wherein the ~~conductive section is part of a coil that~~ includes a plurality of conductive sections ~~that are~~ disposed between and electrically isolated from the first and second soft magnetic pole layers, and an inorganic nonmagnetic insulating material is disposed between the conductive sections.

11. (Original) The head of claim 1, wherein the second pedestal includes a high magnetic saturation material.

12. (Previously Presented) The head of claim 1, wherein the soft magnetic pedestal is separated from the first pole layer by less than one hundred nanometers.

13. (Previously Presented) The head of claim 1, wherein the soft magnetic pedestal is separated from the first pole layer by at least one micron.

14. (Currently Amended) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal having a thickness of less than four hundred fifty nanometers between the nanoscale nonferromagnetic gap and the second soft magnetic pole layer, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers; and

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers, the conductive section being part of a coil that substantially encircles the second pole soft magnetic layer; and

wherein the magnetic head has at least one set of characteristics selected from a group consisting of the following sets of characteristics:

(a) the conductive section is ferromagnetic;

(b) the coil includes a first plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the first plurality of conductive sections disposed in a first layer, extending parallel to each other, and each terminating in a conductive portion that is disposed in the first layer and extends transversely to the first plurality of conductive sections; and

(c) the coil includes a second plurality of conductive sections that are disposed between and electrically isolated from the first and second pole layers, the second plurality of conductive sections disposed in a second layer, extending parallel to each other, and having a different length measured in a direction parallel to the medium-facing surface.

15. (Canceled)

16. (Currently Amended) The head of claim ~~[[15]]~~14, wherein the conductive section is ferromagnetic.

17. (Canceled)

18. (Currently Amended) The head of claim ~~[[15]]~~14, wherein the ~~conductive section is part of a coil that~~ includes less than seven conductive sections disposed between and electrically isolated from the first and second soft magnetic pole layers.

19. (Currently Amended) ~~The head of claim 15,~~ A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal having a thickness of less than four hundred fifty nanometers between the nanoscale nonferromagnetic gap and the second soft magnetic pole layer, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers; and

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers, the conductive section being part of a coil that substantially encircles the second pole soft magnetic layer; and

wherein the magnetic head has at least one set of characteristics selected from a group consisting of the following sets of characteristics:

(a) the second soft magnetic pole layer has a leading surface and a trailing surface, the trailing surface having a flat area disposed approximately midway between the medium-facing surface and the backgap region, the leading surface having a curved area disposed closest to the flat area;

(b) the second soft magnetic pole layer has a trailing surface that is disposed distal to the first soft magnetic pole layer, the trailing surface having a plurality of curved sections separated by a flat, polished section; and

(c) the first and second soft magnetic pedestals include a high magnetic saturation material.

20. (Currently Amended) The head of claim ~~[[15]]19~~, wherein the second soft magnetic pole layer has ~~[[a]]the~~ trailing surface that is disposed distal to the first soft magnetic pole layer, the trailing surface having ~~[[a]]the~~ plurality of curved sections separated by a flat, polished section.

21. (Currently Amended) The head of claim ~~[[15]]14~~, wherein the ~~conductive section is part of a coil that~~ includes ~~[[a]]the first~~ plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the first plurality of conductive sections disposed in ~~[[a]]the first~~ layer, extending parallel to each other, and each terminating in ~~[[a]]the~~ conductive portion that is disposed in the first layer and extends transversely to the first plurality of conductive sections.

22. (Currently Amended) The head of claim ~~[[15]]14~~, wherein the ~~conductive section is part of a coil that~~ includes ~~[[a]]the second~~ plurality of conductive sections that are disposed between and electrically isolated from the first and second pole layers, the second plurality of conductive sections disposed in ~~[[a]]the second~~ layer, extending parallel to each other, and having ~~[[a]]the~~ different length measured in ~~[[a]]the~~ direction parallel to the medium-facing surface.

23. (Currently Amended) The head of claim ~~[[15]]14~~, wherein the conductive section is part of a coil that includes a plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, and an inorganic nonmagnetic insulating material is disposed between the conductive sections.

24. (Currently Amended) The head of claim ~~[[15]]19~~, wherein the first and second soft magnetic pedestals include ~~[[a]]the~~ high magnetic saturation material.

25. (Currently Amended) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and terminating adjacent to the medium-facing surface in a return pole tip;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a soft magnetic pedestal adjoining the second soft magnetic pole layer, the soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal terminating adjacent to the medium-facing surface in a write pole tip that is at least two orders of magnitude smaller than the return pole tip, the soft magnetic pedestal having a thickness that is less than two hundred and fifty nanometers between a gap and the second soft magnetic pole layer; and

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers, the conductive section being part of a coil; and

wherein the magnetic head has at least one set of characteristics selected from a group consisting of the following sets of characteristics:

(a) the coil substantially encircles the backgap region;

(b) the coil includes a first plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the first plurality of conductive sections disposed in a first layer, extending parallel to each other, and each terminating in a conductive portion that is disposed in the first layer and extends transversely to the first plurality of conductive sections;

(c) the coil includes a second plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the second plurality of conductive sections disposed in a second layer, extending parallel to each other, and having a different length measured in a direction parallel to the medium-facing surface; and

(d) the coil includes a third plurality of conductive sections that are disposed between and electrically isolated from the first and second pole soft magnetic layers, and an inorganic nonmagnetic insulating material is disposed between the third plurality of conductive sections.

26. (Currently Amended) The head of claim 25, wherein the ~~conductive section is part of a coil that~~ substantially encircles the second soft magnetic pole layer.

27. (Currently Amended) The head of claim 25, wherein the ~~conductive section is part of a coil that~~ substantially encircles the backgap region.

28. (Currently Amended) The head of claim 25, wherein the ~~conductive section is part of a coil that~~ includes less than seven conductive sections disposed between and electrically isolated from the first and second soft magnetic pole layers.

29. (Currently Amended) ~~The head of claim 25,~~A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and terminating adjacent to the medium-facing surface in a return pole tip;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a soft magnetic pedestal adjoining the second soft magnetic pole layer, the soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal terminating adjacent to the medium-facing surface in a write pole tip that is at least two orders of magnitude smaller than the return pole tip, the soft magnetic pedestal having a thickness that is less than two hundred and fifty nanometers between a gap and the second soft magnetic pole layer; and

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers; and

wherein the magnetic head has at least one set of characteristics selected from a group consisting of the following sets of characteristics:

(a) the second soft magnetic pole layer has a leading surface and a trailing surface, the trailing surface having a flat area disposed approximately midway between the medium-facing surface and the backgap region, the leading surface having a curved area disposed closest to the flat area;

(b) the second soft magnetic pole layer has a trailing surface that is disposed distal to the first soft magnetic pole layer, the trailing surface having a plurality of curved sections separated by a flat, polished section; and

(c) the pedestal includes a high magnetic saturation material.

30. (Currently Amended) The head of claim 25, wherein the second soft magnetic pole layer has ~~[[a]]the~~ trailing surface that is disposed distal to the first soft magnetic pole layer, the trailing surface having ~~[[a]]the~~ plurality of curved sections separated by ~~[[a]]the~~ flat, polished section.

31. (Currently Amended) The head of claim 25, wherein the ~~conductive section is part of a coil that~~ includes ~~[[a]]the first~~ plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the first plurality of conductive sections disposed in ~~[[a]]the first~~ layer, extending

parallel to each other, and each terminating in ~~[[a]]the~~ conductive portion that is disposed in the first layer and extends transversely to the conductive sections.

32. (Currently Amended) The head of claim 25, wherein the ~~conductive section is part of a coil that~~ includes ~~[[a]]the~~ second plurality of conductive sections that are disposed between and electrically isolated from the first and second soft magnetic pole layers, the second plurality of conductive sections disposed in ~~[[a]]the~~ second layer, extending parallel to each other, and having ~~[[a]]the~~ different length measured in a direction parallel to the medium-facing surface.

33. (Currently Amended) The head of claim 25, wherein the ~~conductive section is part of a~~ coil that includes ~~[[a]]the~~ third plurality of conductive sections that are disposed between and electrically isolated from the first and second pole soft magnetic layers, and ~~[[an]]the~~ inorganic nonmagnetic insulating material is disposed between the third plurality of conductive sections.

34. (Currently Amended) The head of claim ~~[[25]]29~~, wherein the pedestal includes ~~[[a]]the~~ high magnetic saturation material.

35. (Previously Presented) The head of claim 25, wherein the write pole tip is separated from the return pole tip by the gap of at least one micron.

36. (Previously Presented) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically

coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first soft magnetic pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers; and

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers;

wherein the conductive section is part of a coil that substantially encircles the second soft magnetic pole layer; and

wherein the second pole layer has a leading surface and a trailing surface, the trailing surface having a flat area disposed approximately midway between the medium-facing surface and the backgap region, the leading surface having a curved area disposed closest to the flat area.

37. (Previously Presented) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically

coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first soft magnetic pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers;

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers;

wherein the conductive section is part of a coil that substantially encircles the second soft magnetic pole layer; and

wherein the second pole layer has a trailing surface that is disposed distal to the first pole layer, the trailing surface having a plurality of curved sections separated by a flat, polished section.

38. (Previously Presented) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first soft magnetic pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers;

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers;

wherein the conductive section is part of a coil that substantially encircles the second soft magnetic pole layer; and

wherein the conductive section is part of a coil that includes a plurality of conductive sections that are disposed between and electrically isolated from the first and second pole layers, the conductive sections disposed in a layer, extending parallel to each other, and each terminating in a conductive portion that is disposed in the layer and extends transversely to the conductive sections.

39. (Previously Presented) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first soft magnetic pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers;

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers;

wherein the conductive section is part of a coil that substantially encircles the second soft magnetic pole layer; and

wherein the conductive section is part of a coil that includes a plurality of conductive sections that are disposed between and electrically isolated from the first and second pole layers, the conductive sections disposed in a layer, extending parallel to each other, and having a different length measured in a direction parallel to the medium-facing surface.

40. (Previously Presented) A magnetic head for writing information on a relatively-moving medium, the head having a leading end, a trailing end and a medium-facing surface, the head comprising:

a first soft magnetic pole layer disposed in the head adjacent to the medium-facing surface and extending substantially perpendicular to the medium-facing surface;

a second soft magnetic pole layer disposed closer than the first soft magnetic pole layer to the trailing end, the second soft magnetic pole layer magnetically coupled to the first soft magnetic pole layer in a backgap region that is removed from the medium-facing surface;

a first soft magnetic pedestal adjoining the first soft magnetic pole layer, the first soft magnetic pedestal including a region that extends less than the first soft magnetic pole layer extends from the medium-facing surface;

a second soft magnetic pedestal adjoining the second soft magnetic pole layer, the second soft magnetic pedestal disposed closer than the second soft magnetic pole layer to the medium-facing surface and extending less than the second soft magnetic pole layer extends from the medium-facing surface, the second soft magnetic pedestal separated from the first soft magnetic pedestal by a nanoscale nonferromagnetic gap, the second soft magnetic pedestal and the first soft magnetic pedestal having track widths that are substantially aligned for a distance that is less than nine hundred nanometers;

a conductive section that is disposed between and electrically isolated from the first and second soft magnetic pole layers;

wherein the conductive section is part of a coil that substantially encircles the second soft magnetic pole layer; and

wherein the first and second pedestals include a high magnetic saturation material.